Remarks

The Applicants have amended Claim 15 in several ways. In particular, the claim is now directed to a direct spin-draw method of producing a multifilament yarn which has a strength from a stress-strain curve of at least 3 cN/dtex, a Young's modulus of no more than 25 cN/dtex, a minimum value of a differential Young's modulus at 3 – 10% extension of no more than 6.6 cN/dtex, and an elastic recovery following 10% elongation of at least 90%. Support may be found throughout the Applicants' disclosure such as in the second full paragraph of Page 11, Page 6, first full paragraph, Page 7, first full paragraph, Page 5, second full paragraph and Table 1 on Page 25.

Claim 15 has also been amended to recite a relaxation heat treatment at a relaxation factor of 8 to 20% between the second heated roll and a winder. The structure for this change may be found in Figs. 1 and 2, for example. Support may also be found in the paragraphs from the bottom of Pages 12 to 14 of the Specification.

Claim 15 has further been amended to recite an interlacing treatment to make the CF value of 1 – 30 between the second heated roll and the winder. Support may, again, be found in the figures. Entry into the official file and consideration on the merits is respectfully requested.

All of the claims stand rejected under 35 U.S.C. §103 over the combination of Toshio and Rowan with Fujimoto. The Applicants respectfully submit that even if one skilled in the art were to make the hypothetical combination, the resulting combination would still fail to result in the Applicants' claimed methodology.

The Applicants first agree with the Examiner's frank acknowledgement that Fujimoto fails to disclose a second heated roll used for relaxation treatment having a surface roughness of 1.5S – 8S and intermingling to the Applicants' claimed CF value. The Applicants also agree that Rowan does not disclose that R_{max} of the R_a is within the Applicants' claimed range. The rejection looks to

Rowan to make up for the admitted deficiencies of Fujimoto and further looks to Toshio for the deficiencies of both Fujimoto and Rowan. Essentially, the rejection takes bits and pieces of very different disclosures and pieces them together despite the fact that one skilled in the art would not do so. In that regard, there are serious differences between Fujimoto and Rowan that would result in their not being combined (and this is completely separate from the differences between what the Applicants claim and what the prior art discloses). For example, the Applicants seek to produce multifilament yarns that are excellent in soft stretching properties. Moreover, those soft stretching properties apply to polytrimethylene terephthalate yarn. This is sharply different from Rowan which relates to tire yarn having low shrinkage and high breaking strength.

Thus, the Applicants' multifilament yarns are completely different from those of Rowan. Although Rowan does not explicitly disclose what kind of polyesters are actually used, it is apparent to those skilled in the art that the polyester is polyethylene terephthalate (PET) based on the knowledge that tire yarns having low shrinkage and high breaking strength are naturally made from polyethylene terephthalate (PET), the disclosure of polyethylene terephthalate (PET) in Col. 3 at Lines 38 – 39 of Rowan and the extrusion temperature of 299°C in Table 1 of Rowan. Because polytrimethylene terephthalate (PTT) is a soft polymer and Rowan is directed to tire yarns made from polyethylene terephthalate (PET), the fibers, their characteristics and the techniques applied to making those fibers are not applicable from Rowan to the Applicants' methodology involving polytrimethylene terephthalate (PTT). On the other hand, Fujimoto is directed to polytrimethylene terephthalate (PTT) yarn. Hence, Rowan has no more application to Fujimoto than it does to the Applicants' claimed subject matter. For this reason alone, the Applicants respectfully submit that the combination is not proper and one skilled in the art would not reasonably be expected to make such a combination.

In any event, the Applicants have amended Claim 15 as noted above with respect to clarifying physical properties of the produced yarn. This means excellent soft stretch properties such that the yarn has a strength from a stress-strain curve of at least of 3 cN/dtex, a Young's modulus of no more than 25 cN/dtex, a minimum value of a differential Young's modulus at 3 – 10% extension of no more than 6.6 cN/dtex, and an elastic recovery following 10% elongation of at least 90%. The Applicants respectfully submit that both of Fujimoto and Rowan completely fail to disclose such characteristics. Therefore, both references are essentially non-enabling.

On that same point, the Applicants note with appreciation the Examiner's helpful comments in the "Response to Arguments" portion of the Official Action and the observation that features upon which the Applicants previously relied to distinguish over the prior art were not recited in the rejected claims. This language mentioned above does exactly that wherein physical properties of the product are explicitly claimed. This is yet another reason why the hypothetical combination is inapplicable.

The Applicants' Specification on Page 13, Line 32 spanning Page 14, Line 10 discloses that the interlacing treatment can control the tension of the yarn before the interlacing treatment and performs a relaxation heat treatment quite efficiently. In addition, by performing the interlacing treatment, the yarn can be packed, frictioned with the yarn and the second heated roll can be decreased and the relaxation heat treatment can be performed efficiently. Thus, by performing the interlacing treatment, a relaxation heat treatment can be performed efficiently and an excellent soft stretch of the multifilament yarn can be attained.

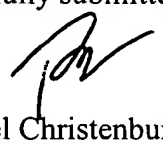
In sharp contrast, Toshio does not provide disclosure of the position of performing an interlacing treatment in the yarn production process nor the excellent effects achieved by the Applicants' claimed process. Toshio only discloses the effect of weaving the thermoplastic synthetic

fiber. To further distinguish over the contribution of Toshio to the hypothetical combination, the Applicants have amended Claim 15 as noted above to recite that the position of the interlacing treatment to have the desired effect of the relaxation heat treatment occurs between the second heated roll and the winder. The Applicants respectfully submit that Toshio fails to disclose this. As a consequence, even if one skilled in the art were to hypothetically combine Toshio and Rowan with Fujimoto, the resulting methodology would still be different from what the Applicants claim.

The Applicants, again, note with appreciation the Examiner's helpful comments and the "Response to Arguments" portion of the Official Action and the commentary that selected features upon which the Applicants previously relied to distinguish over the prior art such as interlacing with applied tension modified or not recited in the claims. The Applicants respectfully submit that the above-mentioned amendments clarify this feature of the Applicants' methodology. Again, even if one skilled in the art were to combine Toshio and Rowan with Fujimoto, the resulting methodology would still be different from what the Applicants claim. Withdrawal of the rejection is respectfully requested.

In light of the foregoing, the Applicants respectfully submit that the entire application is now in condition for allowance, which is respectfully requested.

Respectfully submitted,



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